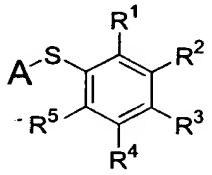
CLAIMS

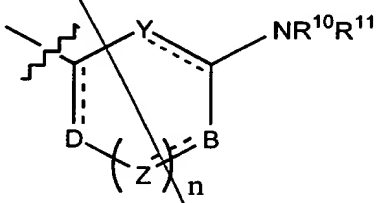
We claim:

1. A compound of the structure



wherein R^1, R^2, R^3, R^4 and R^5 are each independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, cyano, nitro, cycloalkyl and carboxaldehyde;

with the proviso that at least one of R^1 or R^3 is



wherein D, B, Y and Z at each occurrence are independently selected from the group consisting of $-CR^6=$, $-CR^7R^8-$, -C(O)-, -O-, $-SO_2-$, -S-, -N=, and $-NR^9-$;

n is an integer of zero to three;

R^6, R^7, R^8 and R^9, at each occurrence, are each independently selected from the group consisting of hydrogen, alkyl, carboxy,

hydroxyalkyl, alkylaminocarbonyl alkyl, dialkylaminocarbonylalkyl and carboxyalkyl; and

R^{10} and R^{11} are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxycarbonylalkyl, carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino;

Sub A4

wherein R^{10} and R^{11} may be joined to form a three to seven membered heterocyclyl ring, said ring being optionally substituted with one or more substituents R^{13}, wherein R^{13}, at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxycarbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxycarbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclylsulfonylaminocarbonyl;

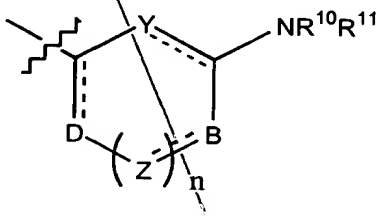
wherein A is an aryl or heterocyclyl group, said aryl or heterocyclyl group having at least one substituent R^{12}, wherein R^{12}, at each occurrence, is independently selected from the group consisting of hydrogen, halogen, alkyl, aryl, haloalkyl, hydroxy, alkoxy, alkoxyalkyl, alkoxycarbonyl, alkoxyalkoxy, hydroxyalkyl, aminoalkyl,

aminocarbonyl, alkyl(alkoxycarbonylalkyl) aminoalkyl, heterocyclyl, heterocyclylalkyl, carboxaldehyde, carboxaldehyde hydrazone, carboxamide, alkoxycarbonylalkyl, carboxy, carboxyalkyl, carboxyalkoxy, hydroxyalkylaminocarbonyl, cyano, amino, heterocyclylalkylamino, carboxythioalkoxy, carboxycycloalkoxy, thioalkoxy, carboxyalkylamino, trans-cinnamyl and heterocyclylalkylaminocarbonyl; and

wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{13} are unsubstituted or substituted with at least one electron donating or electron withdrawing group;

or a pharmaceutically-acceptable salt, optical isomer or prodrug thereof.

2. The compound of claim 1 wherein R^3 is



D, B, Y and Z at each occurrence are independently selected from the group consisting of $-CR^6=$, $-CR^7R^8-$, -C(O)-, -O-, $-SO_2-$, -S-, -N=, and $-NR^9-$;

n is an integer of zero to three;

R^6, R^7, R^8 and R^9, at each occurrence, are each independently selected from the group consisting of hydrogen, alkyl, carboxy,

hydroxyalkyl, alkylaminocarbonyl alkyl, dialkylaminocarbonylalkyl and carboxyalkyl;

R^{10} and R^{11} are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxycarbonylalkyl, carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino;

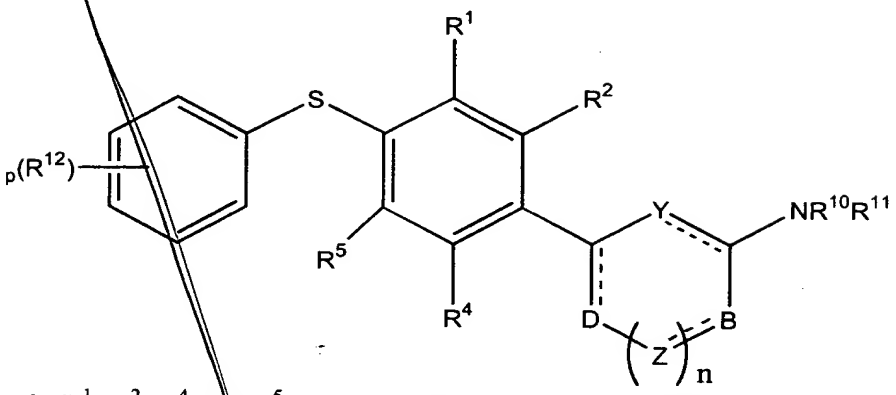
wherein R^{10} and R^{11} may be joined to form a three to seven membered heterocyclyl ring, said ring optionally being substituted with one or more substituents R^{13}, wherein R^{13} at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxycarbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxycarbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclylsulfonylaminocarbonyl;

R^1 and R^2 are each independently selected from the group consisting of hydrogen, halogen, haloalkyl and nitro; and

R^4 and R^5 are each independently selected from the group of hydrogen and alkyl.

Sub A4

3. The compound of claim 1 of the structure



wherein R^1, R^2, R^4 and R^5 are each independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, cyano, nitro, cycloalkyl and carboxaldehyde;

D, B, Y and Z at each occurrence are independently selected from the group consisting of $-CR^6=$, $-CR^7R^8-$, -C(O)-, -O-, $-SO_2-$, -S-, -N=, and $-NR^9-$;

n is an integer of zero to three;

wherein R^6, R^7, R^8 and R^9, at each occurrence, are each independently selected from the group consisting of hydrogen, alkyl, carboxy, hydroxyalkyl, alkylaminocarbonyl alkyl, dialkylaminocarbonylalkyl and carboxyalkyl;

R^{10} and R^{11} are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxycarbonylalkyl, carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino;

wherein R^{10} and R^{11} may be joined to form a three to seven membered heterocyclyl ring, said ring optionally being substituted with one or more

substituents R^{13}, wherein R^{13} at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxycarbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxycarbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclylsulfonylaminocarbonyl;

R^{12}, at each occurrence, is independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocyclyl; and,

p is an integer of zero to five;

wherein R^1, R^2, R^4, R^5, R^{10}, R^{11}, R^{12} and R^{13} are unsubstituted or substituted with at least one electron donating group or electron withdrawing group.

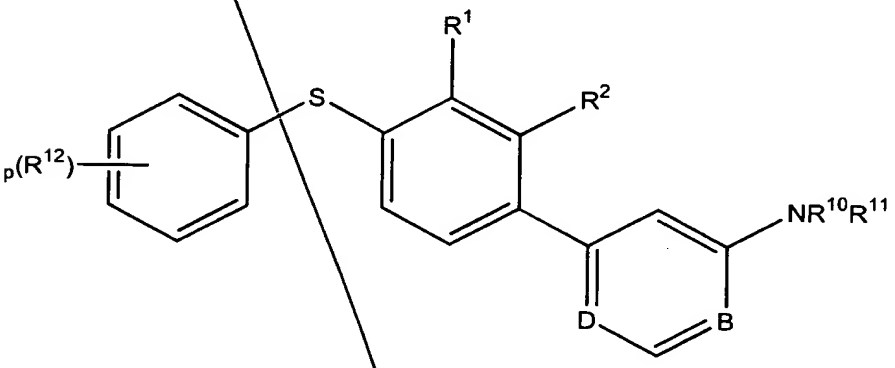
4. The compound of claim 3 wherein p is one;

R^4 and R^5 are hydrogen;

R^{12} is selected from the group consisting of halogen, alkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocyclyl; and

R^{10} and R^{11} are joined to form a three to seven membered heterocyclyl ring; said ring selected from the group consisting of piperidine, piperazine, morpholine, pyrrolidine and azetidine.

5. The compound of claim 1 of the structure



wherein D and B are each independently selected from the group consisting of –N= and –CR^6=;

R^1 and R^2 are each independently selected from the group consisting of hydrogen, halogen and haloalkyl;

R^{10} and R^{11} are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxycarbonylalkyl,

carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino;

wherein R^{10} and R^{11} may be joined to form a three to seven membered heterocyclyl ring, said ring optionally substituted with one or more substituents R^{13}, wherein R^{13} at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxycarbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxycarbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclylsulfonylaminocarbonyl;

R^{12}, at each occurrence, is independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocyclyl; and,

p is an integer of zero to five;

wherein R^1, R^2, R^{10}, R^{11}, R^{12} and R^{13} are unsubstituted or substituted with at least one electron donating group or electron withdrawing group.

Sub A4

6. The compound of claim 5 wherein p is one;

R^{12} is selected from the group consisting of halogen, alkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocyclyl; and

R^{10} and R^{11} are joined to form a three to seven membered heterocyclyl ring; said ring selected from the group consisting of piperidine, piperazine, morpholine, pyrrolidine and azetidine.

7. The compound of claim 1 selected from the group consisting of 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-6-(3-(2*H*-tetrazol-5-yl)-piperidin-1-yl)-pyrimidine, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-6-(4-(2*H*-tetrazol-5-yl)-piperidin-1-yl)-pyrimidine, (1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-3-yl)-methanol, 2-(1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-4-yl)-ethanol, *N*-(1-(4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidin-3-yl)-acetamide, 1-(4-(4-(2-methoxy-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidine-3-ol, *N*-1-(4-(4-(2-methoxy-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidine-3-yl)-acetamide, *N*-1-(4-(4-(2-methoxy-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidine-3-yl)-acetamide, *N*-(1-(4-(4-(2,3-dihydro-

benzo(1,4)dioxin-6-ylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidin-3-yl)-acetamide, 4'-(4-(2,3-dihydro-benzo(1,4)dioxin-6-ylsulfanyl)-3-trifluoromethyl-phenyl)-3,4,5,6-tetrahydro-2*H*-(1,2')bipyridinyl-4-carboxylic acid and 4'-(4-(2,3-dihydro-benzo(1,4)dioxin-6-ylsulfanyl)-3-trifluoromethyl-phenyl)- 3,4,5,6-tetrahydro-2*H*-(1,2')bipyridinyl-3-carboxylic acid.

Sub A4

8. A composition comprising:

a compound of claim 1

in a pharmaceutically acceptable carrier.

9. A method of inhibiting inflammation or suppressing immune response in a mammal comprising administering to said mammal a therapeutic amount of a compound of claim 1.

Add A5